

IDENTIFICATION OF *SPODOPTERA* SPECIMENS COLLECTED ON CORN FIELD IN PRINGSEWU DISTRICT, LAMPUNG PROVINCE, INDOENSIA

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ABSTRACT

Specimens of *Spodoptera* larvae collected on March 19, 2019 from a corn field in Lampung Province were brought to the laboratory of the Department of Plant Protection, University of Lampung, for identification. It was suspected that the larvae were *Spodoptera frugiperda* which have also been currently found in India, Thailand, Bangladesh, China, Myanmar, and Sri Lanka. Morphological identification was conducted in two steps: (1) pictorial/color identification and (2) detailed morphological identification by examining external structures of the larvae. DNA sequencing and identification were also performed to further confirm the morphological identification. Prior to the identification process, brief field observations were conducted to estimate plant damage percentage and to characterize the nature damage. Field observation indicated that *Spodoptera* larvae caused damage to corn plants by consuming foliage and making holes in leaves damaging approximately 72% of corn plants. Feeding in the whorl of corn produced a characteristic row of perforations in the leaves. Based on the morphological characteristics, it is concluded that the larvae belong to the species of *Spodoptera frugiperda* J.E. Smith (Lepidoptera: Noctuidae). This conclusion was then confirmed with the results of molecular (DNA) identification. The sequence of DNA was in proximity to the sequence of DNA of *Spodoptera frugiperda*. Phylogenetic tree analysis showed that their DNA sequences were in the same group with *S. frugiperda* isolates of Honnali (MH753325.1), Hanchipura (MH753332.1), Belagavi (MH 753329.1), KEPH A (MH190444.1) and EPHE.1 (MH190445.1). Based on these finding, therefore, it is confirmed that the specimens belong to the species of *Spodoptera frugiperda*.

Keywords: *Spodoptera frugiperda*, corn, morphological identification, DNA sequencing and identification